38th Annual Meeting, APS Division of Plasma Physics
11-15 November 1996, Denver, CO
Abstract Submittal Form

Deadline: Wednesday, 10 July 1996

Subject Classification Category _____ ☐ Theory ☐ Experiment
(Refer to the DPP Subject Category list on page M19.)

UCRL-JC-124655 Abs

Characterization of electron temperature in hohlraum targets by x-ray spectroscopy * C.A. Back, S. H. Glenzer, K. Estabrook, R. L. Kauffman, O. L. Landen, B. J. MacGowan, L. V. Powers, T. D. Shepard, and G. F. Stone, *Lawrence Livermore National Laboratory P. O. Box 808, Livermore, CA 94551*

Current designs of targets for achieving fusion by indirect drive inertial confinement use gold cavities (hohlraums) that are filled with gas. To test our understanding of the bulk energetics in such designs we have measured the electron temperature at different positions within gas-filled Au hohlraums that are 2.75 mm long and 1.6 mm in diameter. Hydrodynamic simulations indicate that the electron temperature and density profiles can have significant differences. Data include x-ray spectra (2 - 4 Å) from mid-Z dopants as well as x-ray pinhole images of the targets. The analysis reveals a difference of up to 1.5 keV when comparing the temperatures between targets having different density gas fills. These results will be compared with calculations.

*This work was performed under the auspices of the U.S. Department of Energy by the Lawrence Livermore National Laboratory under contract No. W-7405-ENG-48.

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